How Do They Do That?!?

Ahhh! We have just discovered and discussed how enzymes aid in the chemical reactions of all organisms, but how do they actually work? Well, today your hand will become an enzyme and demonstrate some of the functions and properties of enzymes. Working in your assigned groups of 2-3 people, complete the following activities, record your data, and answer the discussion questions. Here are a few tips:

*A different person will be the enzyme at each station

*The other group member(s) will be the timer/ recorder.

*The other group member(s) can not help the enzyme.

*Your supplies will be at the front of the class.

*Spread out & use the classroom!!!

1. Empty and scatter a bag of pennies on the floor by a desk. Place the cup on top of the desk. Using only your right hand (or left hand if you are left-handed), time and record the number of pennies that the enzyme can pick up in one minute. Only one penny can be picked up at a time and must be placed in a cup on the desk.

Number of pennies picked up:

Trial 1:_____

Trial 2:_____

Trial 3:_____

Average:_____

2. Tape a tennis ball to the palm of the enzyme's hand using masking tape and leaving the thumb free. Again see how many pennies can be picked up in one minute.

Number of pennies:

Trial 1:_____

Trial 2:_____

Trial 3:_____

Average:_____

3. This time both hands maybe used. Each hand can only hold one penny at a time. Like the other steps, record the number of pennies collected in one minute.

Number of pennies:

Trial 1:_____

Trial 2:_____

Trial 3:_____

Average:_____

4. Tape the entire hand of the enzyme, including the thumb. See how many pennies can be picked up in a minute now!

Number of pennies:

Trial 1:_____

Trial 2:_____

Trial 3:_____

Average:_____

*Please put your supplies away and answer the thinking questions!!!

THINKING QUESTIONS

***These will be handed in, so be sure answers are neat and in full sentences! Rubric included on back!

1. What enzymatic properties could the following objects represent: the tennis ball, the penny, the masking tape (activity 4 only), the "other hand?"

2. What was the active site? WHY?

3. How did the number of pennies picked up change throughout the activity? What does this represent? Does this accurately describe known enzyme functions?

4. You be the teacher...How else can enzyme properties and functions be tested in this activity? I mean, can you think of any additional steps for this activity?

5. What are some enzyme properties and functions that were not demonstrated in this lab?